What we will learn

**Protocol : UART | SPI | I2C**

**Technology : Embedded | Internet of Things | Robotics | Electrical | Li-Fi | BCI** (Brain–computer interface)

* Day 1 - Overview of this course | Details about Arduino & Applications
* Day 2 - Installing Arduino Software & Libraries | Programming Arduino

**EMBEDDED SYSTEM - ARDUINO**

* Day 3 - Overview of Embedded System | LED, Switch & Buzzer with Arduino

**EMBEDDED SYSTEM -ARDUINO (COMMUNICATION PROTOCOL)**

* Day 4 - Rat Trap design using LDR & Laser Arduino | ADC - SPI protocol
* Day 5 - Bluetooth controlled Light with Arduino | UART Protocol
* Day 6 - I2C LCD with Arduino | I2C protocol
* Day 7 - RFID based authentication system using Arduino | I2C Protocol

**EMBEDDED SYSTEM - ARDUINO (SENSORS)**

* Day 8 - Motion Detection using PIR & IR Sensor | Digital Sensor
* Day 9 - Temperature Monitoring System using Temperature sensor | Analog Sensor
* Day 10 - Distance Measurement using Ultrasonic Senser
* Day 11 - Water level Detection & Alert System | Analog & Digital Sensor
* Day 12 - Humidity Detection & Alert using DHT11 Sensor
* Day 13 - Water quality detection using PH Sensor | UART Protocol
* Day 14 - Waterflow detection using flow sensor | pules sensor
* Day 15 - Keypad with Arduino for stop clock

**EMBEDDED SYSTEM - ARDUINO (DISPLAY)**

* Day 16 - Simple Message Chat using LCD Display Arduino
* Day 17 - Switch press counter using 7-Segment display
* Day 18 - TFT display with Arduino

**EMBEDDED SYSTEM - ARDUINO (MOTOR)**

* Day 19 - DC motor speed control using Trimpot | DC motor
* Day 20 - Automatic door lock system using PIR & Servo Moter
* Day 21 - Stepper motor control using Arduino

**ROBOTIC SYSTEM - ARDUINO**

* Day 22 - Robot design | Bluetooth & vice controlled robot using Arduino
* Day 23 - Obstacle avoidance robot using Ultrasonic

**ELECTRICAL SYSTEM - ARDUINO**

* Day 24 - Power Montering system | ADC |SPI protocol
* Day 25 - Fault Detection | ADC

**INTERNET OF THINGS - ARDUINO**

* Day 26 - Industry monitoring system using IoT | ESP8266

**MATLAB - ARDUINO**

* Day 27 - RADAR using Ultarsoniic & Arduino with Mat lab

**ARDUINO BONUS**

* Day 28 - Audio speaker from a signal using Arduino & signal Genarater
* Day 29 - Li-Fi based data transmission using Arduino
* Day 30 - Brain controlled robot using Arduino

**Day 1**

* **Introduction To The Embedded System Arduino**
* Orientation Session
* Introduction To Embedded System
* Overview Of Arduino & Other Microcontrollers
* Applications Of Arduino
* Interview Questions & News

**Day 2**

* **Installing Software & Libraries / Programing Arduino**
* How To Install Arduino Ide / Exploring The Arduino
* Programming Arduino / Basic Syntex
* Interview Questions & News

**Day 3**

* **Basic Embedded Application Using Arduino**
* Concepts About Sensors & Digital Io
* Basic Embedded Application Using Arduino
* Interview Questions & News

**Day 4**

* **Analog Io Rat Trap Design Using Laser**
* Analog Io / Laser
* Rat Trap Design Using Analog Input
* Interview Questions & News

**Day 5**

* **Mobile Controlled Light & Bluetooth**
* UART Protocol & Serial Communication
* Bluetooth Controlled Application
* Interview Questions & News

**Day 6**

* **LCD Interface With Arduino**
* I2C Protocol
* LCD With Arduino With & Without I2C
* Interview Questions & News

**Day 7**

* **RFID-Based Authentication System**
* Radio Frequency Identification
* RFID-Based Authentication System
* Interview Questions & News

**Day 8**

* **Motion Detection Using Ir & PIR Sensor**
* Infrared Technology
* Motion Detection Using Ir & PIR Senser
* General Discussion About Identifying Sensors
* Interview Questions & News

**Day 9**

* **Temperature Monitoring System**
* Temperature Sensor / How To Work On Sensors
* Temperature Montering System
* Interview Questions & News

**Day 10**

* **TFT Display Interface With Arduino**
* Display Modules
* Interfacing Tiny Oled Display With Arduino
* Interview Questions & News

**Day 11**

* **DC Motor Speed Control Using Potentiometer**
* Pulse Width Modulation
* Speed Control DC Motor
* Interview Questions & News

**Day 12**

* **Vice-Controlling Robot Via Bluetooth**
* Robot Design & Motors
* Voice Controlled Robot
* Interview Questions & News

**Day 13**

* **Obstacle Avoidance Robot**
* Ultrasound Technology & Working
* Obstacle Avoidance Robot
* Interview Questions & News

**Day 14**

* **Radar Using Ultrasonic & Matlab**
* Rader Using Ultrasonic & Matlab With Arduino
* Interview Questions & News

**Day 15**

* **Brain Controlled Robot**
* BIC-Arduinobluetooth Unique Address
* How To Configure Bluetooth (Hc-05) To Connect With Brainsense
* Acquiring Your Attention Values Using Arduino With Brainsense
* How To Design A Robot Car
* Brain-Controlled Robotic Car Using Your Attention With The Help Of Arduino
* Interview Questions & News

**Day 16**

* **Distance Measurement Using An Ultrasonics Sensor**
* Ultrasonic-Based Distance Measurement
* Interview Questions & News

**Day 17**

* **Water Level Detection Using Internal & External ADC**
* Water Level Measurement Using Internal
* Water Level Measurement Using External ADC
* Interview Questions & News

**Day 18**

* **Humidity & Temperature Measurement Using DHT11 Sensor**
* Temperature & Humidity Measurement Using A DHT11 Sensor
* Interview Questions & News

**Day 19**

* **Water Quality Measurement**
* Water Quality Measurement Using PH Sensor / Default Serial Pins
* Water Quality Measurement Using PH Sensor / Software Serial
* Interview Questions & News

**Day 20**

* **Waterflow Detection Using Waterflow Senser**
* A Water Flow Sensor Is Working & Formula
* Water Flow Detection Using A Water Flow Sensor
* Interview Questions & News

**Day 21**

* **Keypad With Arduino**
* Working Of Keypad
* Interface Keypad With Arduino
* Simple Password Authentication System With LCD And Keypad
* Interview Questions & News

**Day 22**

* **LCD Interface- Simulator**
* LCD Interface - Simulator
* Interview Questions & News

**Day 23**

* **7-Segment Display Interface With Arduino**
* Working Of 7-Segment Display
* Segment Display With Arduino
* Interview Questions & News

**Day 24**

* **Servo Motor Interface With Arduino**
* Interfacing Servo Moter With Arduino
* Interview Questions & News

**Day 25**

* **Stepper Moter Interface With Arduino**
* Inter Fasing Steper Moter With Arduino
* Interview Question & News

**Day 26**

* **Power Monitoring System**
* Electrical Circuit Design / Voltage. Current And Power Measurement
* Interview Questions & News

**Day 27**

* **Electrical Fault Detection System - Overload**
* Overview About Relay & Mcb
* Fault Detection System
* Interview Questions & News

**Day 28**

* **Industry Monitoring System Using IoT Technology**
* Overview About The Internet Of Things
* Exploring Math Work’s Thingspeak Cloud
* Industry Monitoring System Using Thingspeak IoT
* Interview Questions & News

**Day 29**

* **Audio Speaker & Protocol Study Experiment Using Analog Discovery Kit**
* Analog Discovery Kit With Arduino / Study Experiment
* Interview Questions & News

**Day 30**

* **Li-Fi-Based Data Transmission**
* Data Transmission Using Li-Fi Technology
* Interview Questions & News